1.3 OPERATION PLAN/SITE CONSTRUCTION

1.3.1 Details of Seam To Be Mined

The parachute Creek Member of the Green River Formation includes the rich oil shale deposits (Mahogany Zone) to be mined by the White River Shale Project. The Mahogany Zone ranges in depth beneath the surface from 400 feet to 1,400 feet across the tract. There are no outcrop exposures on the site. Thickness of the primary mining zone is 55 feet, although the primary Mahogany Zone averages approximately 100 feet thick. Oil content of the mining zone averages 28 gallons per ton as determined by the Fischer assay. The oil shale deposits exhibit lateral uniformity and dip at about 150 to 200 ft/mile to the northwest.

1.3.2 Mining Sequence

A schedule of the planned Phase I mining construction activities is presented in Table 1-1.

Initial activities at the mine site encompass development of the temporary mine access road; site preparation at the production decline and service shaft area; site preparation at the mine service building area; site preparation for the concrete batch plant; and provision of temporary construction erosion control features. Subsequent to access and site preparation activities, the shaft collars and decline portal, mine service building, batch plant, electrical distribution, and runoff holding pond dam will be constructed.

Once collar and portal work is completed, the production decline and intake air shaft will be sunk. These will be interconnected by a drift at a depth of 1054 ft. which is the mine operating level at elevation 4431. The shaft will be 30 ft. in diameter and will be lined with concrete as it is sunk. The production decline will be driven to a vertical depth of about 1154 ft. and the intake ventilation shaft to a depth of 1054 ft. Construction ventilation will be provided as each opening is sunk. Temporary mine ventilation will be established through the openings when they are connected at the operating level.

As part of pre-production development, a mining test room will be excavated at the operating level and connected to the intake shaft and production decline. This room will be utilized for examination of the ore body characteristics, and to obtain ore sample for process testing.

Service shaft construction will begin following development of the test room and will be driven to a vertical depth of 1105 ft. The shaft will interconnect by drifts the production decline and air intake shaft at 1035 ft.

A 30 ft. diameter exhast ventilation shaft will be sunk for the Phase I mine following completion of the intake ventilation and service shafts and decline. This is due to the time required to establish a drift connecting the intake and exhaust shafts.

The shaft pillar area will be excavated while the drift to the exhaust shaft is being developed. This area includes the mine entries, ore storage and crusher chambers, electrical substation, baghouse, and mine/vehicle maintenance shop. Following completion of the shaft pillar area, development of room and pillar mining panels will commence.